XXVIII.—*Some Remarks on Sundevall's Account in the number of Secondaries of Birds.* By Henry Seebohm.

The readers of 'The Ibis' are very much indebted to the Editors of that periodical for giving them a translation of so suggestive a paper as that by Sundevall on the Wings of Birds (Ibis, 1886, pp. 389–457). I use the word "suggestive," because in the portion which I have studied the facts are only approximately accurate, and the reader is left to draw his own conclusions from them. In the first place, we may dismiss the word *arm-remiges* to the limbo of useless synonyms and adopt the commonly used term of *secondary quills*: usually called, for the sake of brevity, *secondaries*.

I propose to confine my remarks to three groups of birds:—*Gallinæ,* or Game Birds; *Grallæ,* or Cranes and Rails; *Limicolæ,* or Plovers and Snipes.

All these birds have 10 primaries; the question to be considered is:—Are there any characters to be found in the secondaries by which these three families may be distinguished from each other?

To begin with the Common Lapwing, *Vanellus cristatus,* the wing consists of—

10 primaries;
12 nearly black secondaries;
3 long green secondaries; beyond which are several abbreviated secondaries, each shorter than the one preceding it.

Sundevall says that it has—

14 secondaries nearly alike in structure and size;
2 secondaries, which, without being abbreviated, possess a decidedly different form;
3 secondaries, decidedly shorter.

What Sundevall means, I am sure I do not know; but suffice it to note that it is only after the 15th secondary that abbreviations begin.

Let us now examine the wing of a Curlew, *Numenius arquatus,* which consists of—

10 primaries;

17 secondaries, the last four of which are each decidedly wider and longer than the one preceding it.

Sundevall says that it has—

15 secondaries, nearly alike in structure and size;
2 which, without being abbreviated, possess a decidedly different form;
3 decidedly shorter.

In this case we agree as to the number of unabbreviated secondaries, though we differ as to the point where the change of shape begins.

The Woodcock, *Scolopax rusticula,* possesses—

10 primaries;
13 secondaries, the last of which is the longest, and is followed by several abbreviated secondaries.

Sundevall says that it has—

12 secondaries, nearly alike in structure and size;
4 decidedly shorter feathers.

The Turnstone, *Strepsilas interpres,* has—

10 primaries;
9 secondaries with white bases;
3 elongated and coloured like the coverts, followed by several abbreviated ones.

Sundevall agrees that there are 12 secondaries unabbreviated, though he divides them differently.

So far we find some difficulty in explaining the figures given by the Swedish naturalist, but we have arrived at the conclusion that the number of unabbreviated secondaries in Limicolæ varies from 12 to 17. I have examined a considerable number of species, and have not yet met with an exception to this rule.

Passing on to the Grallæ, I find the Water Rail, *Rallus aquaticus,* to have a wing constructed as follows:—

10 primaries.
9 unabbreviated secondaries, of which the last is coloured like the succeeding abbreviated ones, the last but one (the 8th) being slightly intermediate.

The wing of the Corn Crake, *Crex pratensis,* is formed on precisely the same model; nevertheless Sundevall, though he agrees that the total number of unabbreviated secondaries is alike in the two species, makes it 10; and, for some inscrutable reason, divides those of the Corn Crake into 9 typical and 1 aberrant, but those of the Water Rail into 7 typical and 3 aberrant.

The wing of the Coot, *Fulica atra,* exactly resembles those of the Corn Crake and Water Rail, but Sundevall makes it consist of 9 typical and 3 aberrant unabbreviated primaries.

If further investigation should prove that in the family Rallidæ there are never more than 9 unabbreviated secondaries, and in the family Charadriidæ never less than 12, we have a most valuable external character by which a Rail may be distinguished from a Sandpiper, and which we may at once apply to the remarkable bird *Tringa leucoptera,* which many ornithologists regard as a Rail. So far as it is possible to ascertain without relaxing the specimen in the Leyden Museum, which is in a very fragile condition, it has at least 10 unabbreviated secondaries, so that the imperfect evidence at our command confirms the original determination of the bird as a Sandpiper.

Turning now to Sundevall's synopsis, we find that a remarkable character presents itself in all the Gallinæ which he appears to have examined. These birds differ from all the others contained in his list in having an abbreviated 1st secondary. Bastard primaries are common enough, especially amongst the family Turdidæ, but bastard secondaries are probably confined to Game Birds.

The wing of the Pheasant, *Phasianus colchicus,* is constructed as follows:—

10 primaries;
1 abbreviated secondary, an inch and a half or more shorter than the rest.
10 unabbreviated secondaries, followed by several abbreviated ones, of which the first is not abbreviated more than an eighth of an inch.

In the Red-legged Partridge, *Caccabis rufa,* the bastard secondary is 1¼ inches shorter than the second secondary, but there appear to be only 9 unabbreviated secondaries.

How far the existence of an abbreviated secondary (or, in other words, to what extent the abbreviation of the 1st secondary) extends to the various families in the Order Gallinæ is a question of great interest. Sundevall's attention was probably first directed to the abbreviation of the 1st secondary or 11th quill by Nitzsch, who enumerates the following genera as exceptional in this respect :—*Numida, Polyplectron, Lophophorus, Crax, Penelope,* and *Crypturus.*

In *Numida* the abnormally abbreviated 1st secondary appears to be only about half the length of the rest, but in *Polyplectron* and *Lophophorus* the abbreviation is very slight. It is, however, by no means absent: in both these genera the difference in length between the 11th and 12th wing-feathers is twice as great as that between the 12th and 13th.

Crax, Penelope, and *Crypturus,* on the other hand, have the 11th quill scarcely shorter than the 12th. It is very satisfactory to find that the Hemipodes and the Sand Grouse, which differ from the Grouse and Pheasants in having two layers of spots on their eggs, also differ from them in not having the 1st secondary abbreviated. The importance of the character is also increased by the fact that it confirms Huxley's divisions of the true Gallinæ into Peristeropodes and Alectoropodes. The latter have the first secondary abbreviated, but the former have not.

It is very difficult to examine the quills of a bird in the skin, and a series of expanded wings of typical birds of all the various genera would be very interesting, and might lead to important results.

XXIX.—*Descriptions of new Species and Subspecies of* Trochilidæ. By HANS VON BERLEPSCH.

1. PHAËTHORNIS NATTERERI, sp. nov.

Phaetornis longuemareus, Pelzeln (nec Less.), Orn. Brasil. p. 27 (Matogrosso).

Ph. nattereri, sp. nov., *Ph. longuemarei* affinis, differt rectricibus omnibus imprimis externis multo angustioribus, intermediis inter apicem album et basin pallidius bronzi-